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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,772	12/03/2003	David D. Nolte	12258-0021	4208

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EXAMINER	
JARRETT, LORE RAMILLANO	
ART UNIT	**PAPER NUMBER**
1797	

MAIL DATE	DELIVERY MODE
11/24/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/726,772	NOLTE ET AL.	
	Examiner	Art Unit	
	LORE JARRETT	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *8/4/09*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *12,17,18,45 and 59-67* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *12,17,18,45 and 59-67* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12/3/03* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *8/21/09*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Status of Claims

1. Applicant's reply filed on 8/4/09 is acknowledged. Claims 1-11, 13-16, 19-44, and 46-58 were cancelled. Claims 12, 17-18, 45, and 59-67 are pending and are under examination.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 8/21/09 is acknowledged. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Objections

3. The objection to claims 55 and 56 are withdrawn.

Claim Interpretation

4. See prior Office action, filed on 2/6/09.

Claim Rejections - 35 USC § 112

5. The rejection of claim 14 under 35 U.S.C. 112, second paragraph, is withdrawn. In light of applicant's amendments, a new rejection follows.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 18 is rejected because the limitation, "source wavelength," is not clear. It cannot be determined which structural feature applicant is referring to in applicant's originally filed disclosure. For examination purposes, the Office will interpret the above limitation to be referring to the "source beam."

Prior art rejections

8. In light of applicant's amendments, the rejections over the prior art are withdrawn. New rejections follow.

Claim Rejections - 35 USC § 103

9. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

10. **Claims 12, 17, 18, 45, and 59-65** are rejected under 35 U.S.C. 103(a) as being unpatentable over Debreczeny et al. ("Debreczeny," US 7079252, newly cited) in view of Virtanen (US 6312901, previously cited).

As to claims 12, 18, 45, 59-63, Debreczeny discloses, in figs. 2-3, a device including:

a substrate (i.e. 24) having a first plurality of targets;

an optical source (i.e. 21) that generates a source beam (i.e. Debreczeny's optical source is capable of performing the function recited after "generates," because such language is intended use language);

a beam splitter (i.e. 22a) that splits the source beam into a probe beam and a reference beam (i.e. Debreczeny's beam splitter is capable of performing the function recited after "generates," because such language is intended use language);

an adaptive optical element (i.e. 26(a)) on both the signal path and the reference path that combines a first portion of the signal beam and a first portion of the reference beam to form a first output beam which travels along the signal path, and combines a second portion of the signal beam and a second portion of the reference beam to form a second output beam which travels along the reference path;

a signal path along which the probe beam travels (i.e. this limitation is considered a statement of intended use because it is unclear how this claim further limits the structure of the claimed device);

a reference path along which the reference beam travels, the reference path being at least partially different from the signal path (i.e. this limitation is considered a statement of intended use because it is unclear how this claim further limits the structure of the claimed device);

a reference path detector (i.e. col. 6, line 65 to col. 7, line 14; col. 9, lines 51-58) on the reference path responsive to the second output beam to generate a reference path signal (i.e. Debreczeny's detectors are capable of performing the function recited after “responsive to" because such language is intended use language);

a signal path detector (i.e. col. 6, line 65 to col. 7, line 14; col. 9, lines 51-58) on the signal path responsive to the first output beam to generate a signal path signal (i.e. Debreczeny's detectors are capable of performing the function recited after “responsive to" because such language is intended use language);

a processing system (i.e. col. 7, lines 14-31; col. 9, line 59 to col. 10, line 58) that determines the presence or absence of the first analyte based upon the reference path

signal alone or in combination with the signal path signal. Debreczeny's processing system further computes a difference signal by subtracting one of the signal path signal and the reference path signal from the other of the signal path signal and the reference path signal, and determines the presence or absence of the first analyte based upon the difference signal (i.e. col. 9, line 59 to col. 10, line 58). See also col. 3, line 40 to col. 11, line 30.

As to claim 65, this limitation is considered a statement of intended use because it is unclear how this claim further limits the structure of the claimed device.

As to claims 12, 17, and 61, Debreczeny does not specifically disclose a scanner.

Virtanen discloses an assay device comprising a solid support substrate to which a plurality of cleavable signal elements is attached in a spatially addressable pattern. In some embodiments of the assay device, the solid support may preferably be a plastic, and in these embodiments, is most preferably polycarbonate. The solid support in some embodiments is fashioned as a disk, preferably in dimensions compatible with detection by existing laser reflection-based detectors, such as an audio compact disk (CD) reader, a compact disk-read only memory (CD-ROM) reader, a digital video disk (DVD) reader, or the like (i.e. "scanner," col. 5, line 54 to col. 6, line 8).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Debreczeny's device by including a scanner, as disclosed by Virtanen, because it would be desirable to have an economical system to fabricate spatially addressable probe arrays in a simplified format that provides both for ready

detection and the ability to assay for large numbers of test substances (i.e. analytes) in a fluid test sample in a single step, or a minimum number of steps, or assay for a single test substance or analyte in a large number of fluid test samples (i.e. Virtanen, col. 2, lines 59-66).

As to claims 45 and 64, the modified Debreczeny does not specifically disclose a motor.

In addition to the above, Virtanen discloses in one aspect, the assay device is rotated and a fluid sample is applied near the center of the circular assay device substrate. The centrifugal forces associated with the rotation of the assay device disk distribute the fluid sample across the planar face of the solid substrate (i.e. col. 15, lines 34-43).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the modified Debreczeny's device by including a motor, as disclosed by Virtanen, because it would be desirable to have a means to insure that the surface of the substrate is uniformly covered with a constant and uniformly distributed fluid sample (i.e. Virtanen, col. 15, lines 34-43).

11. **Claims 66-67** are rejected under 35 U.S.C. 103(a) as being unpatentable over Debreczeny in view of Virtanen, as to claims 12, 17, 18, 45, and 59-65, and further in view of Drevillon et al. ("Drevillon," US 5485271, newly cited).

See Debreczeny and Virtanen supra.

The modified Debreczeny does not specifically disclose an electro-optical modulator and a polarizer.

Drevillon discloses an infrared ellipsometer for taking a measurement of a sample. It comprises an exciter group 3, a sample support 5, an analysis group 7 and electronic means 9. (2) This ellipsometer is an infrared ellipsometer working in a wavelength range extending from approximately 2 micrometers up to approximately 11 micrometers. The exciter group 3 comprises a Globar type source 101, a Michelson interferometer 103, a polarizer 105, and an optical means 107 for aligning source 101 with sample 1. The ellipsometer comprises a phase modulator 8, preferably photoelastic, in Zn.Se., which modulates the transmitted luminous flux at a frequency w. Phase modulator 8 is preferably in exciter group 3. It can, however, be in the receiver group, without noticeably modifying the optical signal form received by photodetector 703. Electronic means 9 receives, in addition to the electric signal supplied by photodetector 703, a first reference corresponding to the modulator termed high-frequency reference, and various signals originating from Michelson interferometer 103. These signals, which are lower in frequency than those provided by the modulator, indicate the moments at which spectrum scanning starts and stops, the direction of this scanning comprising a low-frequency reference signal supplied by the reference laser of the Michelson interferometer 103. (i.e. col. 3, line 54 to col. 4, line 50; see also patented claim 1).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the modified Debreczeny by incorporating an electro-optical modulator on the reference path, as disclosed by Drevillon, because the modified Debreczeny recognizes modulating beams of light to obtain an optimal null (i.e. col. 6,

lines 8-39), and it would be desirable to provide a reference signal modulated at a different frequency to easily differentiate it from the other signals (i.e. Drevillon, col. 4, lines 31-41). Furthermore, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the modified Debreczeny by incorporating a polarizer on both the signal path and the reference path because it would be desirable to control the characteristics of light that enter the sample and reference cell.

Response to Arguments

12. Applicant's arguments with respect to claims 12-14, 16-18, and 45-58 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: 7405831 (Nolte et al.); 2008/0218752 (Hagler); 4371785 (Pedersen); 7570851 (Weiner); 5459571 (Dammann et al.); and 6330064 (Rieder).

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LORE JARRETT whose telephone number is (571)272-7420. The examiner can normally be reached on Mon. to Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LORE JARRETT/
Primary Examiner, Art Unit 1797

11/17/09